

Karl Marx

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Part V: The Production of Absolute and of Relative Surplus-Value

Chapter Sixteen

## Absolute and Relative Surplus-Value



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### CHAPTER SIXTEEN

# Absolute and Relative Surplus-Value

In considering the labour-process, we began (see Chapter V.) by treating it in the abstract, apart from its historical forms, as a process between man and Nature. We there stated, "If we examine the whole labour-process, from the point of view of its result, it is plain that both the instruments and the subject of labour are means of production, and that the labour itself is productive labour." And in Note 2, same page, we further added: "This method of determining, from the standpoint of the labour-process alone, what is productive labour, is by no means directly applicable to the case of the capitalist process of production." We now proceed to the further development of this subject.

So far as the labour-process is purely individual, one and the same labourer unites in himself all the functions, that later on become separated. When an individual appropriates natural objects for his livelihood, no one controls him but himself. Afterwards he is controlled by others. A single man cannot operate upon Nature without calling his own muscles into play under the control of his own brain. As in the natural body head and hand wait upon each other, so the labour-process unites the labour of the hand with that of the head. Later on they part company and even become deadly foes. The product ceases to be the direct product of the individual, and becomes a social product, produced in common by a collective labourer, *i.e.*, by a combination of workmen, each of whom takes only a part, greater or less, in the manipulation of the subject of their labour. As the co-operative character of the labour-process becomes more and more marked, so, as a necessary consequence, does our notion of productive labour, and of its agent the productive labourer, become extended. In order to labour productively, it is no longer necessary for you to do manual work yourself; enough, if you are an organ of the collective labourer, and perform one of its subordinate functions. The first definition given above of productive labour, a definition deduced from the very nature of the production of material objects, still remains correct for the collective labourer, considered as a whole. But it no longer holds good for each member taken individually.

On the other hand, however, our notion of productive labour becomes narrowed. Capitalist production is not merely the production of commodities, it is essentially the production of surplus-value. The labourer produces, not for himself, but for capital. It no longer suffices, therefore, that he should simply produce. He must produce surplus-value. That labourer alone is productive, who produces surplus-value for the capitalist, and thus works for the self-expansion of capital. If we may take an example from outside the sphere of production of material objects, a schoolmaster is a productive labourer when, in addition to belabouring the heads of his scholars, he works like a horse to enrich the school proprietor. That the latter has laid out his capital in a teaching factory, instead of in a sausage factory, does not alter the relation. Hence the notion of a productive labourer implies not merely a relation between work and useful effect, between labourer and product of labour, but also a specific, social relation of production, a relation that has sprung up historically and stamps the labourer as the direct means of creating surplus-value. To be a productive labourer is, therefore, not a piece of luck, but a misfortune. In Book IV, which treats of the history of the theory, it will be more clearly seen, that the production of surplus-value has at all times been made, by classical political economists, the distinguishing characteristic of the productive labourer. Hence their definition of a productive labourer changes with their comprehension of the nature of surplus-value. Thus the Physiocrats insist that only agricultural labour is productive, since that alone, they say, yields a surplus-value. And they say so because, with them, surplus-value has no existence except in the form of rent.

The prolongation of the working-day beyond the point at which the labourer would have produced just an equivalent for the value of his labour-power, and the appropriation of that surplus-labour by capital, this is production of absolute surplus-value. It forms the general groundwork of the capitalist system, and the starting-point for the production of relative surplus-value. The latter pre-supposes that the working-day is already divided into two parts, necessary labour, and surplus-labour. In order to prolong the surplus-labour, the necessary labour is shortened by methods whereby the equivalent for the wages is produced in less time. The production of absolute surplus-value turns exclusively upon the length of the working-day; the production of relative surplus-value, revolutionises out and out the technical processes of labour, and the composition of society. It therefore pre-supposes a specific mode, the capitalist mode of production, a mode which, along with its methods, means, and conditions, arises and develops itself spontaneously on the foundation afforded by the formal subjection of labour to capital. In the course of this development, the formal subjection is replaced by the real subjection of labour to capital.

It will suffice merely to refer to certain intermediate forms, in which surplus-labour is not extorted by direct compulsion from the producer, nor the producer himself yet formally subjected to capital. In such forms capital has not yet acquired the direct control of the labour-process. By the side of independent producers who carry on their handicrafts and agriculture in the traditional old-fashioned way, there stands the usurer or the merchant, with his usurer's capital or merchant's capital, feeding on them like a parasite. The predominance, in a society, of this form of exploitation excludes the capitalist mode of production; to which mode, however, this form may serve as a transition, as it did towards the close of the Middle Ages. Finally, as is shown by modern "domestic industry," some intermediate forms are here and there reproduced in the background of Modern Industry, though their physiognomy is totally changed.

If, on the one hand, the mere formal subjection of labour to capital suffices for the production of absolute surplus-value, if, *e.g.*, it is sufficient that handicraftsman who previously worked on their own account, or as apprentices of a master, should become wage labourers under the direct control of a capitalist; so, on the other hand, we have seen, how the methods of producing relative surplus-value, are, at the same time, methods of producing absolute surplus-value. Nay, more, the excessive prolongation of the working-day turned out to be the peculiar product of Modern Industry. Generally speaking, the specifically capitalist mode of production ceases to be a mere means of producing relative surplus-value, so soon as that mode has conquered an entire branch of production; and still more so, so soon as it has conquered all the important branches. It then becomes the general, socially predominant form of production. As a special method of producing relative surplus-value, it remains effective only, first, in so far as it seizes upon industries that previously were only formally subject to capital, that is, so far as it is propagandist; secondly, in so far as the industries that have been taken over by it, continue to be revolutionised by changes in the methods of production.

From one standpoint, any distinction between absolute and relative surplus-value appears illusory. Relative surplus-value is absolute, since it compels the absolute prolongation of the working-day beyond the labour-time necessary to the existence of the labourer himself. Absolute surplus-value is relative, since it makes necessary such a development of the productiveness of labour, as will allow of the necessary labour-time being confined to a portion of the working-day. But if we keep in mind the behaviour of surplus-value, this appearance of identity vanishes. Once the capitalist mode of production is established and become general, the difference between absolute and relative surplus-value makes itself felt, whenever there is a question of raising the rate of surplus-value. Assuming that labour-power is paid for at its value, we are confronted by this alternative: given the productiveness of labour and its normal intensity, the rate of surplus-value can be raised only by the

actual prolongation of the working-day; on the other hand, given the length of the working-day, that rise can be effected only by a change in the relative magnitudes of the components of the working-day, viz., necessary labour and surplus-labour; a change which, if the wages are not to fall below the value of labour-power, presupposes a change either in the productiveness or in the intensity of the labour.

If the labourer wants all his time to produce the necessary means of subsistence for himself and his race, he has no time left in which to work gratis for others. Without a certain degree of productiveness in his labour, he has no such superfluous time at his disposal; without such superfluous time, no surplus-labour, and therefore no capitalists, no slave-owners, no feudal lords, in one word, no class of large proprietors. [1]

Thus we may say that surplus-value rests on a natural basis; but this is permissible only in the very general sense, that there is no natural obstacle absolutely preventing one man from disburdening himself of the labour requisite for his own existence, and burdening another with it, any more, for instance, than unconquerable natural obstacle prevent one man from eating the flesh of another. [2] No mystical ideas must in any way be connected, as sometimes happens, with this historically developed productiveness of labour. It is only after men have raised themselves above the rank of animals, when therefore their labour has been to some extent socialised, that a state of things arises in which the surplus-labour of the one becomes a condition of existence for the other. At the dawn of civilisation the productiveness acquired by labour is small, but so too are the wants which develop with and by the means of satisfying them. Further, at that early period, the portion of society that lives on the labour of others is infinitely small compared with the mass of direct producers. Along with the progress in the productiveness of labour, that small portion of society increases both absolutely and relatively. [3] Besides, capital with its accompanying relations springs up from an economic soil that is the product of a long process of development. The productiveness of labour that serves as its foundation and starting-point, is a gift, not of nature, but of a history embracing thousands of centuries.

Apart from the degree of development, greater or less, in the form of social production, the productiveness of labour is fettered by physical conditions. These are all referable to the constitution of man himself (race, &c.), and to surrounding nature. The external physical conditions fall into two great economic classes, (1) Natural wealth in means of subsistence, *i.e.*, a fruitful soil, waters teeming with fish, &c., and (2), natural wealth in the instruments of labour, such as waterfalls, navigable rivers, wood, metal, coal, &c. At the dawn of civilisation, it is the first class that turns the scale; at a higher stage of development, it is the second. Compare, for

example, England with India, or in ancient times, Athens and Corinth with the shores of the Black Sea.

The fewer the number of natural wants imperatively calling for satisfaction, and the greater the natural fertility of the soil and the favourableness of the climate, so much less is the labour-time necessary for the maintenance and reproduction of the producer. So much greater therefore can be the excess of his labours for others over his labour for himself. Diodorus long ago remarked this in relation to the ancient Egyptians. "It is altogether incredible how little trouble and expense the bringing up of their children causes them. They cook for them the first simple food at hand; they also give them the lower part of the papyrus stem to eat, so far as it can be roasted in the fire, and the roots and stalks of marsh plants, some raw, some boiled and roasted. Most of the children go without shoes and unclothed, for the air is so mild. Hence a child, until he is grown up, costs his parents not more, on the whole, than twenty drachmas. It is this, chiefly, which explains why the population of Egypt is so numerous, and, therefore, why so many great works can be undertaken." [4] Nevertheless the grand structures of ancient Egypt are less due to the extent of its population than to the large proportion of it that was freely disposable. Just as the individual labourer can do more surplus-labour in proportion as his necessary labour-time is less, so with regard to the working population. The smaller the part of it which is required for the production of the necessary means of subsistence, so much the greater is the part that can be set to do other work.

Capitalist production once assumed, then, all other circumstances remaining the same, and given the length of the working day, the quantity of surplus-labour will vary with the physical conditions of labour, especially with the fertility of the soil. But it by no means follows from this that the most fruitful soil is the most fitted for the growth of the capitalist mode of production. This mode is based on the dominion of man over nature. Where nature is too lavish, she "keeps him in hand, like a child in leading-strings." She does not impose upon him any necessity to develop himself. [5] It is not the tropics with their luxuriant vegetation, but the temperate zone, that is the mother-country of capital. It is not the mere fertility of the soil, but the differentiation of the soil, the variety of its natural products, the changes of the seasons, which form the physical basis for the social division of labour, and which, by changes in the natural surroundings, spur man on to the multiplication of his wants, his capabilities, his means and modes of labour. It is the necessity of bringing a natural force under the control of society, of economising, of appropriating or subduing it on a large scale by the work of man's hand, that first plays the decisive part in the history of industry. Examples are, the irrigation works in Egypt, [6] Lombardy, Holland, or in India and Persia where irrigation by means of artificial canals, not only supplies the soil with the water indispensable to it, but also carries down to it, in the shape of sediment from the hills, mineral fertilisers. The

secret of the flourishing state of industry in Spain and Sicily under the dominion of the Arabs lay in their irrigation works. [7]

Favourable natural conditions alone, give us only the possibility, never the reality, of surplus-labour, nor, consequently, of surplus-value and a surplus-product. The result of difference in the natural conditions of labour is this, that the same quantity of labour satisfies, in different countries, a different mass of requirements, [8] consequently, that under circumstances in other respects analogous, the necessary labour-time is different. These conditions affect surplus-labour only as natural limits, *i.e.*, by fixing the points at which labour for others can begin. In proportion as industry advances, these natural limits recede. In the midst of our West European society, where the labourer purchases the right to work for his own livelihood only by paying for it in surplus-labour, the idea easily takes root that it is an inherent quality of human labour to furnish a surplus-product. [9] But consider, for example, an inhabitant of the eastern islands of the Asiatic Archipelago, where sago grows wild in the forests. "When the inhabitants have convinced themselves, by boring a hole in the tree, that the pith is ripe, the trunk is cut down and divided into several pieces, the pith is extracted, mixed with water and filtered: it is then quite fit for use as sago. One tree commonly yields 300 lbs., and occasionally 500 to 600 lbs. There, then, people go into the forests, and cut bread for themselves, just as with us they cut fire-wood." [10] Suppose now such an eastern bread-cutter requires 12 working hours a week for the satisfaction of all his wants. Nature's direct gift to him is plenty of leisure time. Before he can apply this leisure time productively for himself, a whole series of historical events is required; before he spends it in surplus-labour for strangers, compulsion is necessary. If capitalist production were introduced, the honest fellow would perhaps have to work six days a week, in order to appropriate to himself the product of one working day. The bounty of Nature does not explain why he would then have to work 6 days a week, or why he must furnish 5 days of surplus-labour. It explains only why his necessary labour-time would be limited to one day a week. But in no case would his surplus-product arise from some occult quality inherent in human labour.

Thus, not only does the historically developed social productiveness of labour, but also its natural productiveness, appear to be productiveness of the capital with which that labour is incorporated.

Ricardo never concerns himself about the origin of surplus-value. He treats it as a thing inherent in the capitalist mode of production, which mode, in his eyes, is the natural form of social production. Whenever he discusses the productiveness of labour, he seeks in it, not the cause of surplus-value, but the cause that determines the magnitude of that value. On the other hand, his school has openly proclaimed the productiveness of labour to be the originating cause of profit (read: Surplus-

value). This at all events is a progress as against the mercantilists who, on their side, derived the excess of the price over the cost of production of the product, from the act of exchange, from the product being sold above its value. Nevertheless, Ricardo's school simply shirked the problem, they did not solve it. In fact these bourgeois economists instinctively saw, and rightly so, that it is very dangerous to stir too deeply the burning question of the origin of surplus-value. But what are we to think of John Stuart Mill, who, half a century after Ricardo, solemnly claims superiority over the mercantilists, by clumsily repeating the wretched evasions of Ricardo's earliest vulgarisers?

Mill says: "The cause of profit is that labour produces more than is required for its support." So far, nothing but the old story; but Mill wishing to add something of his own, proceeds: "To vary the form of the theorem; the reason why capital yields a profit, is because food, clothing, materials and tools, last longer than the time which was required to produce them." He here confounds the duration of labour-time with the duration of its products. According to this view, a baker whose product lasts only a day, could never extract from his workpeople the same profit, as a machine maker whose products endure for 20 years and more. Of course it is very true, that if a bird's nest did not last longer than the time it takes in building, birds would have to do without nests.

This fundamental truth once established, Mill establishes his own superiority over the mercantilists. "We thus see," he proceeds, "that profit arises, not from the incident of exchange, but from the productive power of labour; and the general profit of the country is always what the productive power of labour makes it, whether any exchange takes place or not. If there were no division of employments, there would be no buying or selling, but there would still be profit." For Mill then, exchange, buying and selling, those general conditions of capitalist production, are but an incident, and there would always be profits even without the purchase and sale of labour-power!

"If," he continues, "the labourers of the country collectively produce twenty per cent more than their wages, profits will be twenty per cent, whatever prices may or may not be." This is, on the one hand, a rare bit of tautology; for if labourers produce a surplus-value of 20% for the capitalist, his profit will be to the total wages of the labourers as 20:100. On the other hand, it is absolutely false to say that "profits will be 20%." They will always be less, because they are calculated upon the *sum total* of the capital advanced. If, for example, the capitalist have advanced £500, of which £400 is laid out in means of production and £100 in wages, and if the rate of surplus-value be 20%, the rate of profit will be 20:500, *i.e.*, 4% and not 20%.



Then follows a splendid example of Mill's method of handling the different historical forms of social production. "I assume, throughout, the state of things which, where the labourers and capitalists are separate classes, prevails, with few exceptions, universally; namely, that the capitalist advances the whole expenses, including the entire remuneration of the labourer." Strange optical illusion to see everywhere a state of things which as yet exists only exceptionally on our earth. [11] But let us finish — Mill is willing to concede, "that he should do so is not a matter of inherent necessity." On the contrary: "the labourer might wait, until the production is complete, for all that part of his wages which exceeds mere necessities: and even for the whole, if he has funds in hand sufficient for his temporary support. But in the latter case, the labourer is to that extent really a capitalist in the concern, by supplying a portion of the funds necessary for carrying it on." Mill might have gone further and have added, that the labourer who advances to himself not only the necessities of life but also the means of production, is in reality nothing but his own wage-labourer. He might also have said that the American peasant proprietor is but a serf who does enforced labour for himself instead of for his lord.

After thus proving clearly, that even if capitalist production had no existence, still it would always exist, Mill is consistent enough to show, on the contrary, that it has no existence, even when it does exist. "And even in the former case" (when the workman is a wage labourer to whom the capitalist advances all the necessities of life, he the labourer), "may be looked upon in the same light," (i.e., as a capitalist), "since, contributing his labour at less than the market-price, (!) he may be regarded as lending the difference (?) to his employer and receiving it back with interest, &c." [12] In reality, the labourer advances his labour gratuitously to the capitalist during, say one week, in order to receive the market price at the end of the week, &c., and it is this which, according to Mill, transforms him into a capitalist. On the level plain, simple mounds look like hills; and the imbecile flatness of the present bourgeoisie is to be measured by the altitude of its great intellects.

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# Changes of Magnitude in the Price of Labour-Power and in Surplus Value

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The value of labour-power is determined by the value of the necessaries of life habitually required by the average labourer. The quantity of these necessaries is known at any given epoch of a given society, and can therefore be treated as a constant magnitude. What changes, is the value of this quantity. There are, besides, two other factors that enter into the determination of the value of labour-power. One, the expenses of developing that power, which expenses vary with the mode of production; the other, its natural diversity, the difference between the labour-power of men and women, of children and adults. The employment of these different sorts of labour-power, an employment which is, in its turn, made necessary by the mode of production, makes a great difference in the cost of maintaining the family of the labourer, and in the value of the labour-power of the adult male. Both these factors, however, are excluded in the following investigation. [1]

I assume (1) that commodities are sold at their value; (2) that the price of labour-power rises occasionally above its value, but never sinks below it.

On this assumption we have seen that the relative magnitudes of surplus-value and of price of labour-power are determined by three circumstances; (1) the length of the working-day, or the extensive magnitude of labour; (2) the normal intensity of labour, its intensive magnitude, whereby a given quantity of labour is expended in a given time; (3) the productiveness of labour, whereby the same quantum of labour yields, in a given time, a greater or less quantum of product, dependent on the degree of development in the conditions of production. Very different combinations are clearly possible, according as one of the three factors is constant and two variable, or two constant and one variable, or lastly, all three simultaneously variable. And the number of these combinations is augmented by the fact that, when these factors simultaneously vary, the amount and direction of their respective variations may differ. In what follows the chief combinations alone are considered.

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## **SECTION 1**

### **LENGTH OF THE WORKING-DAY AND INTENSITY OF LABOUR CONSTANT. PRODUCTIVENESS OF LABOUR VARIABLE.**

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On these assumptions the value of labour-power, and the magnitude of surplus-value, are determined by three laws.

(1.) A working day of given length always creates the same amount of value, no matter how the productiveness of labour, and, with it, the mass of the product, and the price of each single commodity produced, may vary.

If the value created by a working-day of 12 hours be, say, six shillings, then, although the mass of the articles produced varies with the productiveness of labour, the only result is that the value represented by six shillings is spread over a greater or less number of articles.

(2.) Surplus-value and the value of labour-power vary in opposite directions. A variation in the productiveness of labour, its increase or diminution, causes a variation in the opposite direction in the value of labour-power, and in the same direction in surplus-value.

The value created by a working day of 12 hours is a constant quantity, say, six shillings. This constant quantity is the sum of the surplus-value plus the value of the labour-power, which latter value the labourer replaces by an equivalent. It is self-evident, that if a constant quantity consists of two parts, neither of them can increase without the other diminishing. Let the two parts at starting be equal; 3

shillings value of labour-power, 3 shillings surplus-value. Then the value of the labour-power cannot rise from three shillings to four, without the surplus-value falling from three shillings to two; and the surplus-value cannot rise from three shillings to four, without the value of labour-power falling from three shillings to two. Under these circumstances, therefore, no change can take place in the absolute magnitude, either of the surplus-value, or of the value of labour-power, without a simultaneous change in their relative magnitudes, *i.e.*, relatively to each other. It is impossible for them to rise or fall simultaneously.

Further, the value of labour-power cannot fall, and consequently surplus-value cannot rise, without a rise in the productiveness of labour. For instance, in the above case, the value of the labour-power cannot sink from three shillings to two, unless an increase in the productiveness of labour makes it possible to produce in 4 hours the same quantity of necessaries as previously required 6 hours to produce. On the other hand, the value of the labour-power cannot rise from three shillings to four, without a decrease in the productiveness of labour, whereby eight hours become requisite to produce the same quantity of necessaries, for the production of which six hours previously sufficed. It follows from this, that an increase in the productiveness of labour causes a fall in the value of labour-power and a consequent rise in surplus-value, while, on the other hand, a decrease in such productiveness causes a rise in the value of labour-power, and a fall in surplus-value.

In formulating this law, Ricardo overlooked one circumstance; although a change in the magnitude of the surplus-value or surplus-labour causes a change in the opposite direction in the magnitude of the value of labour-power, or in the quantity of necessary labour, it by no means follows that they vary in the same proportion. They do increase or diminish by the same quantity. But their proportional increase or diminution depends on their original magnitudes before the change in the productiveness of labour took place. If the value of the labour-power be 4 shillings, or the necessary labour-time 8 hours, and the surplus-value be 2 shillings, or the surplus-labour 4 hours, and if, in consequence of an increase in the productiveness of labour, the value of the labour-power fall to 3 shillings, or the necessary labour to 6 hours, the surplus-value will rise to 3 shillings, or the surplus-labour to 6 hours. The same quantity, 1 shilling or 2 hours, is added in one case and subtracted in the other. But the proportional change of magnitude is different in each case. While the value of the labour-power falls from 4 shillings to 3, *i.e.*, by  $1/4$  or 25%, the surplus-value rises from 2 shillings to 3, *i.e.*, by  $1/2$  or 50%. It therefore follows that the proportional increase or diminution in surplus-value, consequent on a given change in the productiveness of labour, depends on the original magnitude of that portion of the working day which embodies itself in surplus-value; the smaller that portion,

the greater is the proportional change; the greater that portion, the less is the proportional change.

(3.) Increase or diminution in surplus-value is always consequent on, and never the cause of, the corresponding diminution or increase in the value of labour-power. [2]

Since the working-day is constant in magnitude, and is represented by a value of constant magnitude, since, to every variation in the magnitude of surplus-value, there corresponds an inverse variation in the value of labour-power, and since the value of labour-power cannot change, except in consequence of a change in the productiveness of labour, it clearly follows, under these conditions, that every change of magnitude in surplus-value arises from an inverse change of magnitude in the value of labour-power. If, then, as we have already seen, there can be no change of absolute magnitude in the value of labour-power, and in surplus-value, unaccompanied by a change in their relative magnitudes, so now it follows that no change in their relative magnitudes is possible, without a previous change in the absolute magnitude of the value of labour-power.

According to the third law, a change in the magnitude of surplus-value, presupposes a movement in the value of labour-power, which movement is brought about by a variation in the productiveness of labour. The limit of this change is given by the altered value of labour-power. Nevertheless, even when circumstances allow the law to operate, subsidiary movements may occur. For example: if in consequence of the increased productiveness of labour, the value of labour-power falls from 4 shillings to 3, or the necessary labour-time from 8 hours to 6, the price of labour-power may possibly not fall below 3s. 8d., 3s. 6d., or 3s. 2d., and the surplus-value consequently not rise above 3s. 4d., 3s. 6d., or 3s. 10d. The amount of this fall, the lowest limit of which is 3 shillings (the new value of labour-power), depends on the relative weight, which the pressure of capital on the one side, and the resistance of the labourer on the other, throws into the scale.

The value of labour-power is determined by the value of a given quantity of necessaries. It is the value and not the mass of these necessaries that varies with the productiveness of labour. It is, however, possible that, owing to an increase of productiveness, both the labourer and the capitalist may simultaneously be able to appropriate a greater quantity of these necessaries, without any change in the price of labour-power or in surplus-value. If the value of labour-power be 3 shillings, and the necessary labour-time amount to 6 hours, if the surplus-value likewise be 3 shillings, and the surplus-labour 6 hours, then if the productiveness of labour were doubled without altering the ratio of necessary labour to surplus-labour, there would be no change of magnitude in surplus-value and price of labour-power. The only result would be that each of them would represent twice as many use-values

as before; these use-values being twice as cheap as before. Although labour-power would be unchanged in price, it would be above its value. If, however, the price of labour-power had fallen, not to 1s 6d., the lowest possible point consistent with its new value, but to 2s. 10d. or 2s. 6d., still this lower price would represent an increased mass of necessaries. In this way it is possible with an increasing productiveness of labour, for the price of labour-power to keep on falling, and yet this fall to be accompanied by a constant growth in the mass of the labourer's means of subsistence. But even in such case, the fall in the value of labour-power would cause a corresponding rise of surplus-value, and thus the abyss between the labourer's position and that of the capitalist would keep widening. [3]

Ricardo was the first who accurately formulated the three laws we have above stated. But he falls into the following errors: (1) he looks upon the special conditions under which these laws hold good as the general and sole conditions of capitalist production. He knows no change, either in the length of the working-day, or in the intensity of labour; consequently with him there can be only one variable factor, viz., the productiveness of labour; (2), and this error vitiates his analysis much more than (1), he has not, any more than have the other economists, investigated surplus-value as such, *i.e.*, independently of its particular forms, such as profit, rent, &c. He therefore confounds together the laws of the rate of surplus-value and the laws of the rate of profit. The rate of profit is, as we have already said, the ratio of the surplus-value to the total capital advanced; the rate of surplus-value is the ratio of the surplus-value to the variable part of that capital. Assume that a capital C of £500 is made up of raw material, instruments of labour, &c. (c) to the amount of £400; and of wages (v) to the amount of £100; and further, that the surplus-value (s) = £100. Then we have rate of surplus-value  $s/v = £100/£100 = 100\%$ . But the rate of profit  $s/c = £100/£500 = 20\%$ . It is, besides, obvious that the rate of profit may depend on circumstances that in no way affect the rate of surplus-value. I shall show in Book III. that, with a given rate of surplus-value, we may have any number of rates of profit, and that various rates of surplus-value may, under given conditions, express themselves in a single rate of profit.

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## SECTION 2

### WORKING-DAY CONSTANT. PRODUCTIVENESS OF LABOUR CONSTANT. INTENSITY OF LABOUR VARIABLE

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Increased intensity of labour means increased expenditure of labour in a given time. Hence a working-day of more intense labour is embodied in more products than is one of less intense labour, the length of each day being the same. Increased productiveness of labour also, it is true, will supply more products in a given

working-day. But in this latter case, the value of each single product falls, for it costs less labour than before; in the former case, that value remains unchanged, for each article costs the same labour as before. Here we have an increase in the number of products, unaccompanied by a fall in their individual prices: as their number increases, so does the sum of their prices. But in the case of increased productiveness, a given value is spread over a greater mass of products. Hence the length of the working-day being constant, a day's labour of increased intensity will be incorporated in an increased value, and, the value of money remaining unchanged, in more money. The value created varies with the extent to which the intensity of labour deviates from its normal intensity in the society. A given working-day, therefore, no longer creates a constant, but a variable value; in a day of 12 hours of ordinary intensity, the value created is, say 6 shillings, but with increased intensity, the value created may be 7, 8, or more shillings. It is clear that, if the value created by a day's labour increases from, say, 6 to 8 shillings then the two parts into which this value is divided, viz., price of labour-power and surplus-value, may both of them increase simultaneously, and either equally or unequally. They may both simultaneously increase from 3 shillings to 4. Here, the rise in the price of labour-power does not necessarily imply that the price has risen above the value of labour-power. On the contrary, the rise in price may be accompanied by a fall in value. This occurs whenever the rise in the price of labour-power does not compensate for its increased wear and tear.

We know that, with transitory exceptions, a change in the productiveness of labour does not cause any change in the value of labour-power, nor consequently in the magnitude of surplus-value, unless the products of the industries affected are articles habitually consumed by the labourers. In the present case this condition no longer applies. For when the variation is either in the duration or in the intensity of labour, there is always a corresponding change in the magnitude of the value created, independently of the nature of the article in which that value is embodied.

If the intensity of labour were to increase simultaneously and equally in every branch of industry, then the new and higher degree of intensity would become the normal degree for the society, and would therefore cease to be taken account of. But still, even then, the intensity of labour would be different in different countries, and would modify the international application of the law of value. The more intense working-day of one nation would be represented by a greater sum of money than would the less intense day of another nation. [4]

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### SECTION 3

#### PRODUCTIVENESS AND INTENSITY OF LABOUR CONSTANT. LENGTH OF THE WORKING-DAY VARIABLE

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The working-day may vary in two ways. It may be made either longer or shorter. From our present data, and within the limits of the assumptions made on [previously] we obtain the following laws:

(1.) The working-day creates a greater or less amount of value in proportion to its length — thus, a variable and not a constant quantity of value.

(2.) Every change in the relation between the magnitudes of surplus value and of the value of labour-power arises from a change in the absolute magnitude of the surplus-labour, and consequently of the surplus-value.

(3.) The absolute value of labour-power can change only in consequence of the reaction exercised by the prolongation of surplus-labour upon the wear and tear of labour-power. Every change in this absolute value is therefore the effect, but never the cause, of a change in the magnitude of surplus-value.

We begin with the case in which the working-day is shortened.

(1.) A shortening of the working-day under the conditions given above, leaves the value of labour-power, and with it, the necessary labour-time, unaltered. It reduces the surplus-labour and surplus-value. Along with the absolute magnitude of the latter, its relative magnitude also falls, *i.e.*, its magnitude relatively to the value of labour-power whose magnitude remains unaltered. Only by lowering the price of labour-power below its value could the capitalist save himself harmless.

All the usual arguments against the shortening of the working-day, assume that it takes place under the conditions we have here supposed to exist; but in reality the very contrary is the case: a change in the productiveness and intensity of labour either precedes, or immediately follows, a shortening of the working-day. [5]

(2.) Lengthening of the working-day. Let the necessary labour-time be 6 hours, or the value of labour-power 3 shillings; also let the surplus-labour be 6 hours or the surplus-value 3 shillings. The whole working-day then amounts to 12 hours and is embodied in a value of 6 shillings. If, now, the working-day be lengthened by 2 hours and the price of labour-power remain unaltered, the surplus-value increases both absolutely and relatively. Although there is no absolute change in the value of labour-power, it suffers a relative fall. Under the conditions assumed in 1. there



could not be a change of relative magnitude in the value of labour-power without a change in its absolute magnitude. Here, on the contrary, the change of relative magnitude in the value of labour-power is the result of the change of absolute magnitude in surplus-value.

Since the value in which a day's labour is embodied, increases with the length of that day, it is evident that the surplus-value and the price of labour-power may simultaneously increase, either by equal or unequal quantities. This simultaneous increase is therefore possible in two cases, one, the actual lengthening of the working-day, the other, an increase in the intensity of labour unaccompanied by such lengthening.

When the working-day is prolonged, the price of labour-power may fall below its value, although that price be nominally unchanged or even rise. The value of a day's labour-power is, as will be remembered, estimated from its normal average duration, or from the normal duration of life among the labourers, and from corresponding normal transformations of organised bodily matter into motion, [6] in conformity with the nature of man. Up to a certain point, the increased wear and tear of labour-power, inseparable from a lengthened working-day, may be compensated by higher wages. But beyond this point the wear and tear increases in geometrical progression, and every condition suitable for the normal reproduction and functioning of labour-power is suppressed. The price of labour-power and the degree of its exploitation cease to be commensurable quantities.

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## **SECTION 4**

### **SIMULTANEOUS VARIATIONS IN THE DURATION, PRODUCTIVENESS, AND INTENSITY OF LABOUR**

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It is obvious that a large number of combinations are here possible. Any two of the factors may vary and the third remain constant, or all three may vary at once. They may vary either in the same or in different degrees, in the same or in opposite directions, with the result that the variations counteract one another, either wholly or in part. Nevertheless the analysis of every possible case is easy in view of the results given in I., II., and III. The effect of every possible combination may be found by treating each factor in turn as variable, and the other two constant for the time being. We shall, therefore, notice, and that briefly, but two important cases.

#### **A. Diminishing productiveness of labour with a simultaneous lengthening of the working-day.**

In speaking of diminishing productiveness of labour, we here refer to diminution in those industries whose products determine the value of labour-power; such a diminution, for example, as results from decreasing fertility of the soil, and from the corresponding dearness of its products. Take the working-day at 12 hours and the value created by it at 6 shillings, of which one half replaces the value of the labour-power, the other forms the surplus-value. Suppose, in consequence of the increased dearness of the products of the soil, that the value of labour-power rises from 3 shillings to 4, and therefore the necessary labour-time from 6 hours to 8. If there be no change in the length of the working-day, the surplus-labour would fall from 6 hours to 4, the surplus-value from 3 shillings to 2. If the day be lengthened by 2 hours, *i.e.*, from 12 hours to 14, the surplus-labour remains at 6 hours, the surplus-value at 3 shillings [note], but the surplus-value decreases compared with the value of labour-power, as measured by the necessary labour-time. If the day be lengthened by 4 hours, *viz.*, from 12 hours to 16, the proportional magnitudes of surplus-value and value of labour-power, of surplus-labour and necessary labour, continue unchanged, but the absolute magnitude of surplus-value rises from 3 shillings to 4, that of the surplus-labour from 6 hours to 8, an increment of  $33\frac{1}{3}\%$ . Therefore, with diminishing productiveness of labour and a simultaneous lengthening of the working-day, the absolute magnitude of surplus-value may continue unaltered, at the same time that its relative magnitude diminishes; its relative magnitude may continue unchanged, at the same time that its absolute magnitude increases; and, provided the lengthening of the day be sufficient, both may increase.

In the period between 1799 and 1815 the increasing price of provisions led in England to a nominal rise in wages, although the real wages, expressed in the necessaries of life, fell. From this fact West and Ricardo drew the conclusion, that the diminution in the productiveness of agricultural labour had brought about a fall in the rate of surplus-value, and they made this assumption of a fact that existed only in their imaginations, the starting-point of important investigations into the relative magnitudes of wages, profits, and rent. But, as a matter of fact, surplus-value had at that time, thanks to the increased intensity of labour, and to the prolongation of the working-day, increased both in absolute and relative magnitude. This was the period in which the right to prolong the hours of labour to an outrageous extent was established; [7] the period that was especially characterised by an accelerated accumulation of capital here, by pauperism there. [8]

### **B. Increasing intensity and productiveness of labour with simultaneous shortening of the working-day.**

Increased productiveness and greater intensity of labour, both have a like effect. They both augment the mass of articles produced in a given time. Both, therefore,

shorten that portion of the working-day which the labourer needs to produce his means of subsistence or their equivalent. The minimum length of the working-day is fixed by this necessary but contractile portion of it. If the whole working-day were to shrink to the length of this portion, surplus-labour would vanish, a consummation utterly impossible under the régime of capital. Only by suppressing the capitalist form of production could the length of the working-day be reduced to the necessary labour-time. But, even in that case, the latter would extend its limits. On the one hand, because the notion of "means of subsistence" would considerably expand, and the labourer would lay claim to an altogether different standard of life. On the other hand, because a part of what is now surplus-labour, would then count as necessary labour; I mean the labour of forming a fund for reserve and accumulation.

The more the productiveness of labour increases, the more can the working-day be shortened; and the more the working-day is shortened, the more can the intensity of labour increase. From a social point of view, the productiveness increases in the same ratio as the economy of labour, which, in its turn, includes not only economy of the means of production, but also the avoidance of all useless labour. The capitalist mode of production, while on the one hand, enforcing economy in each individual business, on the other hand, begets, by its anarchical system of competition, the most outrageous squandering of labour-power and of the social means of production, not to mention the creation of a vast number of employments, at present indispensable, but in themselves superfluous.

The intensity and productiveness of labour being given, the time which society is bound to devote to material production is shorter, and as a consequence, the time at its disposal for the free development, intellectual and social, of the individual is greater, in proportion as the work is more and more evenly divided among all the able-bodied members of society, and as a particular class is more and more deprived of the power to shift the natural burden of labour from its own shoulders to those of another layer of society. In this direction, the shortening of the working-day finds at last a limit in the generalisation of labour. In capitalist society spare time is acquired for one class by converting the whole life-time of the masses into labour-time.

*Transcribed by Alan Thurrott*

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**From:** <http://www.marxists.org/archive/marx/works/1867-c1/ch17.htm>

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## Various Formulae for the Rate of Surplus-Value

We have seen that the rate of surplus-value is represented by the following formulae:

$$\text{I. } \frac{\text{Surplus-value (s)}}{\text{Variable Capital (v)}} = \frac{\text{Surplus-value}}{\text{Value of labor-power}} = \frac{\text{Surplus-labor}}{\text{Necessary labor}}$$

The two first of these formulae represent, as a ratio of values, that which, in the third, is represented as a ratio of the times during which those values are produced. These formulae, supplementary the one to the other, are rigorously definite and correct. We therefore find them substantially, but not consciously, worked out in classical Political Economy. There we meet with the following derivative formulae.

$$\text{II. } \frac{\text{Surplus-labor}}{\text{Working-day}} = \frac{\text{Surplus-value}}{\text{Value of the Product}} = \frac{\text{Surplus-product}}{\text{Total Product}}$$

One and the same ratio is here expressed as a ratio of labor-times, of the values in which those labor-times are embodied, and of the products in which those values exist. It is of course understood that, by "Value of the Product", is meant only the value newly created in a working-day, the constant part of the value of the product being excluded.

In all of these formulae (II.), the actual degree of exploitation of labor, or the rate of surplus-value, is falsely expressed. Let the working-day be 12 hours. Then, making the same assumptions as in former instances, the real degree of exploitation of labor will be represented in the following proportions.

$$\frac{6 \text{ hours surplus-labor}}{6 \text{ hours necessary labor}} = \frac{\text{Surplus-value of 3 sh.}}{\text{Variable Capital of 3 sh.}} = 100\%.$$

From formulae II. we get very differently,

$$\frac{6 \text{ hours surplus-labor}}{\text{Working-day of 12 hours}} = \frac{\text{Surplus-value of 3 sh.}}{\text{Value created of 6 sh.}} = 50\%.$$

These derivative formulae express, in reality, only the proportion in which the working-day, or the value produced by it, is divided between capitalist and laborer. If they are to be treated as direct expressions of the degree of self-expansion of capital, the following erroneous law would hold good: Surplus-labor or surplus-value can never reach 100%. [1] Since the surplus-labor is only an aliquot part of the working-day, or since surplus-value is only an aliquot part of the value created, the surplus-labor must necessarily be always less than the working-day, or the surplus-value always less than the total value created. In order, however, to attain the ratio of 100:100 they must be equal. In order that the surplus-labor may absorb the whole day (i.e., an average day of any week or year), the necessary labor must sink to zero. But if the necessary labor vanish, so too does the surplus-labor, since it is only a function of the former. The ratio

$$\frac{\text{Surplus-labor}}{\text{Working-day}} \quad \text{or} \quad \frac{\text{Surplus-value}}{\text{Value created}}$$

can therefore never reach the limit 100/100, still less rise to 100+x/100. But not so the rate of surplus-value, the real degree of exploitation of labor. Take, e.g., the estimate of L. de Lavergne, according to which the English agricultural laborer gets only 1/4, the capitalist (farmer) on the other hand 3/4 of the product [2] or its value, apart from the question of how the booty is subsequently divided between the capitalist, the landlord, and others. According to this, this surplus-labor of the English agricultural laborer is to his necessary labor as 3:1, which gives a rate of exploitation of 300%.

The favorite method of treating the working-day as constant in magnitude became, through the use of formulae II., a fixed usage, because in them surplus-labor is always compared with a working-day of given length. The same holds good when the repartition of the value produced is exclusively kept insight. The working-day that has already been realized in given value, must necessarily be a day of given length.

The habit of representing surplus-value and value of labor-power as fractions of the value created — a habit that originates in the capitalist mode of production itself, and whose import will hereafter be disclosed — conceals the very transaction that characterizes capital, namely the exchange of variable capital for living labor-power, and the consequent exclusion of the laborer from the product. Instead of the real fact, we have false semblance of an association, in which laborer and capitalist divide the product in proportion to the different elements which they respectively contribute towards its formation. [3]

Moreover, the formulae II. can at any time be reconverted into formulae I. If, for instance, we have

$$\frac{\text{Surplus-labor of 6 hours}}{\text{Working-day of 12 hours}},$$

then the necessary labor-time being 12 hours less the surplus-labor of 6 hours, we get the following result,

$$\frac{\text{Surplus-labor of 6 hours} \quad 100}{\text{Necessary labor of 6 hours} \quad 100} = \frac{100}{100}.$$

There is a third formula which I have occasionally already anticipated; it is

$$\text{III. } \frac{\text{Surplus-value}}{\text{Value of labor-power}} = \frac{\text{Surplus-labor}}{\text{Necessary labor}} = \frac{\text{Unpaid labor}}{\text{Paid labor}}.$$

After the investigations we have given above, it is no longer possible to be misled, by the formula

$$\frac{\text{Unpaid labor}}{\text{Paid labor}},$$

into concluding, that the capitalist pays for labor and not for labor-power. This formula is only a popular expression for

$$\frac{\text{Surplus-labor}}{\text{Necessary labor}}.$$

The capitalist pays the value, so far as price coincides with value, of the labor-power, and receives in exchange the disposal of the living labor-power itself. His usufruct is spread over two periods. During one the laborer produces a value that is only equal to the value of his labor-power; he produces its equivalent. This the capitalist receives in return for his advance of the price of the labor-power, a product ready made in the market. During the other period, the period of surplus-labor, the usufruct of the labor-power creates a value for the capitalist, that costs

him no equivalent. [4] This expenditure of labor-power comes to him gratis. In this sense it is that surplus-labor can be called unpaid labor.

Capital, therefore, is not only, as Adam Smith says, the command over labor. It is essentially the command over unpaid labor. All surplus-value, whatever particular form (profit, interest, or rent), it may subsequently crystallize into, is in substance the materialization of unpaid labor. The secret of the self-expansion of capital resolves itself into having the disposal of a definite quantity of other people's unpaid labor.

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**From:** <http://www.marxists.org/archive/marx/works/1867-c1/ch18.htm>

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